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# Retention of NAS Moffett Field Complex

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A JOINT REPORT PREPARED BY THE CITIES OF SUNNYVALE AND MOUNTAIN VIEW, CALIFORNIA  
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# Retention of NAS Moffett Field Complex

## EXECUTIVE SUMMARY

It is in the best economic and social interests of the Nation, the State and local communities to retain NAS Moffett Field in its present status as a joint use federal installation. The Naval Air Station, along with other federal tenants and users, forms a combination of unique facilities and services, in addition to providing critical interaction with the high technology community of Silicon Valley. Together, these comprise an irreplaceable resource which must be considered in a broad sense as the Moffett Field Complex. There are compelling socioeconomic and national interest reasons for retaining this complex which represents an important national asset.

Moffett Naval Air Station was, and still is, a vital catalyst in the evolution and continuing health of Silicon Valley—the cradle of high technology. Moffett's immediate neighbor, NASA Ames Research Center, is both a national resource and a \$3 billion facility whose functions and future are integrally bound with NAS Moffett Field. Many nearby high technology and aerospace firms such as Lockheed Missiles & Space Company, GTE Government Systems and others rely on NAS Moffett's secure airfield for defense and aerospace programs. This interdependence allows the Moffett Complex to maximize significant contributions to the nation in the most effective and cost efficient manner. Nearby universities such as Stanford, and U.C. Berkeley further enrich and are dependent upon the Moffett Complex. Closure of Moffett NAS would seriously threaten a research and development resource which is especially important considering the fact that the aerospace industry is America's leading positive contributor to the U.S. balance of trade.

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Closure of Moffett Field would have adverse impacts and costs reaching far beyond the Department of Defense. The Moffett Field Complex is a unique assemblage of interdependent federal facilities and private activities and there are compelling reasons for its retention:

- NAS Moffett represents the essential heart of a unique complex of irreplaceable public and private facilities.
- Closure of NAS Moffett Field would send economically harmful reverberations throughout Silicon Valley; it would have a chilling effect on the future of America's research and development and would damage our nation's aerospace industry.
- Closure of NAS Moffett would adversely affect NASA Ames as well as other federal activities closely linked to national research and development aerospace programs and institutions.
- Moffett closure would seriously compromise the civil emergency preparedness of Silicon Valley and the San Francisco Bay Area in the face of the next big earthquake.
- Environmental clean up of a closed Moffett Field would require mitigating costs, and delays, which cast serious doubt on the presumed economies of closure.
- The overall costs to relocate Moffett's Naval operations elsewhere, and to attempt to sustain activities essential to NASA Ames and other federal activities at Moffett, all underscore the false economies of closure.

The closure of NAS Moffett Field would result in no net economic gain to the public or contribute to the lowering of our national debt and budget once all relevant factors are considered. Silicon Valley has become the core for scientific research and development in aerospace and defense industries. There would be enormous inefficiency and cost to the government of trying to conduct aerospace research and development without an adjacent airfield. Costs to NASA and the aerospace contractors for new or redeveloped facilities would be prohibitive.

Analysis of the closure of NAS Moffett will prove that such a move is not economically prudent, will not aid in balancing our national budget or reducing our deficit, will cause irreparable damage to our national aerospace defense industry and to Silicon Valley and will have a chilling effect, both from an economic and civil emergency preparedness perspective. NAS Moffett is not a "stand alone" military base that can be closed without impacting other federal programs and Silicon Valley.






# INTRODUCTION

The Moffett Field complex, which includes the Naval Air Station, NASA Ames Research Center, other Department of Defense tenants, and nearby high technology and aerospace industries represents a vital and unique national asset. Loss of NAS Moffett Field would have a serious negative effect on the nation's leading role in defense and space technology as well as the local economy. This issue paper presents a complete picture of the local economic activity directly or indirectly dependent on access to the NAS Moffett Airfield and demonstrates that in addition to performing its strategic military mission, Moffett Field is essential to the accomplishments of the missions of NASA and local industry. The Cities of Sunnyvale and Mountain View, NASA Ames Research Center, and Silicon Valley aerospace and research and development industries strongly support the continued operation of NAS Moffett Field as a joint use federal air installation.

This paper represents a cooperative effort and the collective support of the Cities and Chambers of Commerce of Sunnyvale and Mountain View, NASA Ames Research Center, Lockheed Missiles & Space Co., Inc., ESL/TRW, Raytheon Company Semiconductor Division, GTE Government Systems, Santa Clara County Manufacturing Group, Silicon Graphics, Inc. and Sterling Computers.

The conclusions of this paper are:

- NAS Moffett represents the essential heart of a unique complex of irreplaceable public and private facilities.
- Roughly 4,500 industries and 75,000 jobs are related to the Moffett complex.
- Closure of NAS Moffett Field would send economically harmful reverberations throughout Silicon Valley; it would have a chilling effect on the future of America's research and development and damage our nation's aerospace industry.
- Closure of NAS Moffett would adversely affect NASA Ames as well as other federal activities closely linked to national research and development and aerospace programs and institutions.
- Moffett closure would seriously compromise the civil emergency preparedness of Silicon Valley and the San Francisco Bay Area in the face of the next big earthquake.
- Environmental clean up of a closed Moffett Field would require mitigating costs and delays, which cast serious doubt on the presumed economies of closure.
- The overall costs to relocate Moffett's Naval operations elsewhere, and to attempt to sustain activities essential to NASA Ames and other federal activities at Moffett, all underscore the false economies of closure.



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# HISTORICAL PERSPECTIVE

Moffett Field was established five decades ago as the West Coast site for the Navy's dirigible base. The Moffett Field location was selected as the best site for the strategic maritime patrol operations because it is an all weather site, its proximity to the ocean and its central location on America's west coast. The Bay Area Chambers of Commerce raised nearly \$480,000, purchased the thousand acre tract of land, and transferred it to the Navy for one dollar. Construction was completed and the base commissioned in April, 1933, as the Sunnyvale Naval Air Station. Since that time, Moffett Field has been an integral part of the Mountain View/Sunnyvale communities. The Naval Air Station was transferred to the Army for a period of time for use as a training base and was returned to the Navy in 1942 for coastal patrol and mine detection operations, where it remains today.

NAS Moffett Field has had, and continues to play an important and strategic role in aerospace research and development and the economic infrastructure of the Silicon Valley. With its proximity to Stanford University, Moffett became the impetus for the location of new industry and research centers. Today, NAS Moffett includes approximately 1,500 acres, with 3.5 million square feet of facilities including three large aircraft hangers and two runways of 9,200 and 8,100 feet capable of accommodating large military transport aircraft.

NASA Ames acquired a site adjacent to Moffett to take advantage of access to a tightly controlled air field and a local climate considered ideal for flight research, and has made tremendous investments in research and test facilities. Over the five decades the NAS Moffett/NASA Ames complex has developed, critical aerospace and high technology companies have located research and manufacturing operations nearby to take advantage of the secure facilities for testing and transporting proprietary and highly sensitive products. Still greater activity was added when Onizuka Air Force Base and other military operations located near Moffett, Stanford University, NASA and Lockheed.





# NAS MOFFETT FIELD TODAY

The unique complex, which NAS Moffett sparked and sustains, has become the nexus of high technology research and production. Silicon Valley is home to over 2,835 high technology companies employing over 233,822 people. Twenty-one percent of the nation's production of ordnance and accessories, and seventeen percent of the guided missiles/space vehicles are manufactured in Santa Clara County. The County's industries produce more than twenty percent of the nation's computer storage devices, electron tubes and semiconductor and related devices.

Access to the airfield is fundamental to the preservation of the Silicon Valley because of the federal agency and local industry testing and research operations it makes possible. Roughly 4,500 industries and 75,000 jobs benefit from the Moffett complex.

## Military Operations

Moffett is a joint use federal installation—the site of several federal and state agencies and defense operations.

**Navy:** NAS Moffett serves as the 24 hour Eastern Pacific VP ready alert field and the only 24 hour West Coast TACAIR divert field. It is the hub of anti-submarine warfare patrol operations in the Pacific, headquarters for the Commander, Patrol Wings, U.S. Pacific Fleet, and is the largest P-3 "Orion Hunter" base in the world with the responsibility for patrolling 93 million square miles of ocean. It is a primary search-and-rescue launching post for the central Pacific.

**Army and Air Force:** In addition to the active duty Naval mission, NAS Moffett provides airborne logistical support capability for Onizuka Air Force Base. It also provides a secure cargo shipping point for Army, Air Force and Silicon Valley high technology and aerospace contractors.

**California Air National Guard:** The Air National Guard uses NAS Moffett Field to train for combat search and rescue. Its personnel and aircraft locate and recover aircrews and personnel from both enemy-held and friendly territories and seas.

**Naval Air Reserve:** Over 1,000 Naval Air Reservists train at Moffett, supported by 300 full time Reservists. Their mission is to train in peacetime to be ready in the event of full or partial mobilization. The drilling Reservists are assigned to thirteen separate units, each with a different role upon mobilization (i.e., fly and support the P-3 Orion aircraft maintenance worldwide, medical support, etc.) There are two primary reasons for the great success of the Reserve program at Moffett. First, demographically, the Bay Area is a plentiful source of trained and experience Navy veterans to fill the many technically oriented billets. Second, the facilities at Moffett provide a superb "classroom" for realistic, meaningful training on state-of-the-art equipment. Unit for unit, training consists of working alongside active duty counterparts in their environment. Of concern to Reservists is that they live and work in this community, and would be handicapped if required to commute long distances to other areas. The opportunity for training with active duty personnel attracts more and higher quality reservists. Lack of hands-on training would negatively impact the quality of training and their readiness. The importance to the nation of having and maintaining well trained and accessible reservists has been demonstrated with Operation Desert Storm.

**Civil Disaster Relief:** Moffett Field serves as a primary disaster relief assistance staging facility and operational airfield for the entire Bay Area. It was the only airfield in the Bay Area, military or civilian, that remained operational immediately following the October 17, 1990 earthquake, making it the conduit for all federal and state aid to the area.





## NASA Ames Research Center

NASA Ames Research Center was established in 1939 to meet the urgent need for increasing our nation's aeronautical research capability. The location was chosen primarily because of its proximity to the aircraft industry, good flying weather and the availability of the Moffett runways. These reasons are as valid today as they were 51 years ago. Ames presently shares with Moffett Field such key elements as the Moffett airfield facilities, underground utilities, fire protection, perimeter security, and streets and roads. Additionally, Moffett property provides a beneficial and essential noise buffer for Ames' wind tunnel operations.

NASA is Silicon Valley's sixth largest high technology employer with 5,000 jobs. Among its facilities on the 424 acre site are: 14 major wind tunnels, including the world's largest; 18 advanced flight simulators, two super computers, and 25 unique aircraft used for aeronautical flight research and as flying laboratories. These national assets are not duplicated anywhere in the world and have a replacement value in excess of \$3 billion. With an annual budget exceeding \$500 million, many NASA research programs directly and indirectly support the technology objectives of many companies in the Silicon Valley, the State of California and the Nation.

Contributing directly to the development and education of future scientists and engineers, NASA spends more than \$100 million annually at institutions of higher education in California. NASA provides research grants to faculty and students at Stanford, Berkeley, San Jose State and Santa Clara and other universities.

Continued use of the NAS Moffett airfield in a tightly controlled flight environment, compatible with the NASA research flight activity, is essential for Ames to successfully accomplish its mission. Ames operates a diverse fleet of aircraft from Moffett Field as an integral part of its research in aeronautics, space, and earth sciences. Most of these aircraft are one-of-a-kind, specialized vehicles which are hangared,

maintained, and modified at Ames and are flown from Moffett Field. More important, the research scientists, instrumentation engineers, technicians, and data analysis specialists are primarily Ames residents.

The combination of people, computers, and ground-based test and flight test facilities available at Ames provides a unique capability to conduct research. This occurs through computer analysis, wind tunnel testing, flight simulation, and finally, actual flight verification. This could not be accomplished without the access to NAS Moffett airfield.

NASA Ames is the center of activity for national rotorcraft and powered-lift flight research which is fundamentally important to the DoD, industry and other federal agencies. The research programs provide essential rotorcraft design data and solutions to critical powered-lift problems, and are closely coupled with the government and industry community (US Army, US Navy, US Air Force, FAA, Bell, Boeing, General Dynamics, McDonnell Douglas, and Sikorsky).

These aeronautical research programs contribute substantially to the U.S. aerospace technology base which strengthens the nation's economic and defense competitiveness. Many major advances in aircraft design are based on research and development conducted at NASA Ames Research Center. NASA operates the wind tunnels that test virtually every new military and civilian aircraft, supporting one of the few remaining strategically important industries the United States continues to dominate. The resultant economic advantage our nation enjoys in the manufacture and export of aircraft can be directly traced to work undertaken at this facility. The aerospace industry contributes positively to the nation's balance of trade.

Space and earth sciences research is conducted using aircraft as flying laboratories for the study of the planets and stars, and the earth's oceans, atmosphere, and vegetation. These airborne science aircraft are recognized as national and international facilities. The research program using these aircraft has permitted much of the recent and rapid increase of our understanding of the complex nature of the environment. Air-





craft have been used to acquire data on such diverse phenomena as sea and ice, wildlife habitats, Arctic and Antarctic ozone depletion, crop moisture stress, air pollution, severe convective storms, ocean current, land use patterns, hurricane structure, rain forests and soil moisture. In the disciplines of astronomy and astrophysics these aircraft have contributed greatly to scientific understanding. Significant accomplishments include the first infrared observation of a quasar, the first high spatial resolution studies of the solar chromosphere and sunspots, the discovery of rings around the planet Uranus, and the discovery of Comet Wilson and of Supernova 1987a.

NASA Ames Research Center would suffer significant loss of operational capability with closure of NAS Moffett airfield, and would incur significant expense if adjacent property were put to uses incompatible with the established NASA mission.

## Aerospace and High Technology Industries

Numerous industries in the Silicon Valley use and depend upon secure, accessible facilities at Moffett Field. These industries require a secure facility with the capability to transport oversized, overweight products. Among the largest companies directly dependent on the NAS Moffett complex are: Lockheed Missiles & Space Co., Inc.; ESL, a subsidiary of TRW and GTE Government Systems. The cooperative operations of this Complex provides the most cost effective operation for the government, rather than each operating separate facilities adequate to their mission. The proximity of universities, NASA and aerospace industries allow for cost effective research, development, production and transport of products to the federal government.

The largest of these is Lockheed Missiles & Space Company (LMSC), established in Sunnyvale in 1954 directly adjacent to Moffett Field. Two

factors were key in the decision to locate LMSC in Sunnyvale—1) proximity to institutions of higher education, and 2) proximity and access to NAS Moffett's secure military air field. LMSC owns roughly 600 acres of land adjacent to Moffett Field, valued at approximately \$500 million. The company owns over 200 buildings with an estimated replacement value of \$2 billion and LMSC leases 76 buildings at roughly \$46 million a year. Between 1985 and 1990, LMSC invested \$1 billion in capital projects with a construction permit average of \$1 million a year. The company's investments include state of the art, one of a kind facilities: the largest painting facilities in the western United States (to accommodate shuttle size hardware), the second largest thermal altitude chamber in the free world, the largest clean room in the United States (used for manufacturing the Hubble Space Telescope), antennae and anechoic chambers used to simulate a three to five mile range for testing satellite antennas, one of industries' largest acoustic chambers to simulate noise experience during shuttle launches, state of the art microwave technology center, highbays designed to handle multiple spacecraft of varying sizes, in excess of 1.5 million square feet of manufacturing and assembly space, over four million square feet of desk and board space and engineering support including VAX and Cray XPM computers.

LMSC's major business is the integration of large complex missiles, space and ground systems. In addition to the design and build capacity, LMSC has specialized in integration and test at its Sunnyvale facility. The company has invested heavily in large high-bay clean room integration facilities as well as large environmental test facilities ranging from thermal vacuum, acoustic and RF test chambers and autoclaves. The product of this activity is "flight-ready" systems. As a premier system integrator, LMSC's test capabilities are recognized as a national asset. The company's programs include the Trident Missile, Milstar, the Hubble Space Telescope and Space Station Freedom.





Today LMSC is the largest industrial employer in Northern California with approximately 21,000 employees at its Sunnyvale facilities adjacent to Moffett Field. The annual payroll for the Sunnyvale facilities is \$1 billion. After taxes, roughly two-thirds of this payroll is expended in the community. In 1989, sales for Lockheed Corporation approached \$10 billion, with approximately half attributed to LMSC. Half of the sales from the Sunnyvale facility were in classified space programs which used Moffett Field. LMSC does business with approximately 2,900 Santa Clara County companies, representing a total annual value approaching \$290 million.

LMSC requires the use of large military transports in the immediate vicinity of their facility. Airlifts to and from Moffett Field support LMSC's major lines of business. Cargo frequently requires the capacities of a C-5 aircraft and shipments involve varying levels of security precautions. Design criteria for current and future projects have been established based on access to NAS Moffett field for transportation. Shipping containers and transportation have been designed and planned specifically for close airlift support. The size and weight of their products generally preclude transport over public roads and highways. The aircraft used to move this cargo cannot land at most public airports. For example, the Hubble Space Telescope, which was assembled in Sunnyvale, measures 43 feet in height, 14 feet in diameter and weighs nearly 13 tons. These dimensions do not include the container used for shipping the telescope. Moffett Field provides important access to rail, water and air transport for oversize, overweight components and classified products.

ESL Inc., also located in Sunnyvale, designs, develops and manufactures strategic and tactical reconnaissance and communications systems primarily for the U.S. government. ESL established a strong working relationship with Moffett Field in 1971 and is still dependent on the airfield for the flight testing of important national defense programs such as the Guardrail and the shipment of Guardrail programs to their customers throughout the government. Today, ESL employs 2,000 people at its Sunnyvale facilities and contracts with approximately 2,000 Santa Clara County firms. Should access to the airfield become unavailable, some ESL operations critical to national defense may be negatively impacted.

GTE Government Systems designs and manufactures specialized communications systems for various DoD customers. Their Mountain View facility employs 2,600 people with an annual payroll of approximately \$90 million. Over the past few years, GTE utilized the Moffett Field facilities to stage and install some of their systems. Their proximity to Moffett Field's secure facilities is an ongoing asset to both GTE and the Department of Defense.





# FINANCIAL IMPACT

The draft EIS conducted by the Navy as part of the 1990 base closure study indicated that there would be significant negative impacts in population, employment, housing demand, school enrollments, military retirement services and local government revenues should NAS Moffett close. The negative impacts of this EIS included the overall loss of 12,200 jobs, 8,000 fewer households, enrollment decline of 2,300 students, removal of military service facilities, decline in local revenues, and a short term increase in public assistance costs.

The EIS did not include an analysis of the impact of those activities dependent on NAS Moffett. These additional impacts from NASA Ames Research Center, surrounding aerospace and high technology contractors, other Moffett non-Navy entities and associated service industries is estimated to be 75,000 jobs, including 37,000 jobs in associated service industries. Lockheed Missiles & Space Company (with a work force of 21,000) has contracts with approximately 2,900 Santa Clara County companies, representing a total value approaching \$290 million. ESL, highly dependent upon Moffett Field for flight testing important defense programs such as the Guardrail, employs 2,000 people at its Sunnyvale facilities and contracts with approximately 2,000 Santa Clara County firms. The corresponding civilian employment figures associated with the closure of NAS Moffett are 1,600 base employees and 6,000 employees in the service sector. An estimated \$140 million in annual payroll, both military and civilian, would be lost to the surrounding communities.

The cost to operate Moffett Field Naval Air Station is \$25 million annually plus \$27 million in personnel costs. Even if downsized somewhat in the future, the patrol mission is still a vital part of the total force concept in national defense and will be retained at some location. The move of the operational squadrons, supporting training facilities and equipment, with the administrative staffs is estimated to cost between \$285 to \$450 million—a cost that could

keep Moffett open for at least twelve years at their annual operating budget of \$25 million.

Under existing law, the Navy will continue to be responsible for environmental clean up of the base. To date, the cost of the environmental clean up study is \$25 million. It is estimated that another \$16 - \$32 million will be required to complete the study, and \$90 million will be required to clean up the hazardous waste sites. It is estimated that the clean up will take up to fifteen years to complete and EPA regulations preclude redevelopment of contaminated sites for three years after the clean up is completed.

A consideration of the base closure is the potential revenue from the sale and disposition of property to the benefit of the DoD. Closure of NAS Moffett Field would not produce federal government economies or substantial revenues. In accordance with federal regulations, property is first offered to other federal agencies, then to state and local government agencies. Ongoing federal support may be required for remaining military installations, including Onizuka Air Force Base and training and administrative support for Reservist activities. Continued federal support will be necessary for the operation of NASA and aerospace contractor activities. To preserve the ongoing federal interests, minimal property would be available for sale to offset relocation costs.

It is critical that any criteria for base closure consider the overall impact to the federal government for relocation and closure of the base, not just the reduction of the budget of one branch of the armed forces. The cost of relocating vs. the cost of remaining could take 15 years or more for the Navy to reach the "break even point." The question of net gain accruing to the public, taking into account synergistic relationships of current uses and prospective alternate uses, is one that must be addressed. The requirements of the Air Force, NASA and related aerospace industries necessitate continued operation of NAS Moffett Field.





# CONCLUSION

The closure of NAS Moffett Field would result in no net economic gain to the public or contribute to the lowering of our national debt and budget once all the relevant factors are considered. There would be enormous inefficiency and cost to the government of trying to conduct aerospace research and development without an adjacent airfield. Costs to NASA and the aerospace contractors for new or redeveloped facilities would be prohibitive. Silicon Valley has become the core for scientific research and development in aerospace and defense industries. Closure of NAS Moffett Field would have a devastating effect on NASA flight operations and would have a chilling effect on the contributions that high technology and aerospace industry make to Silicon Valley and the nation.

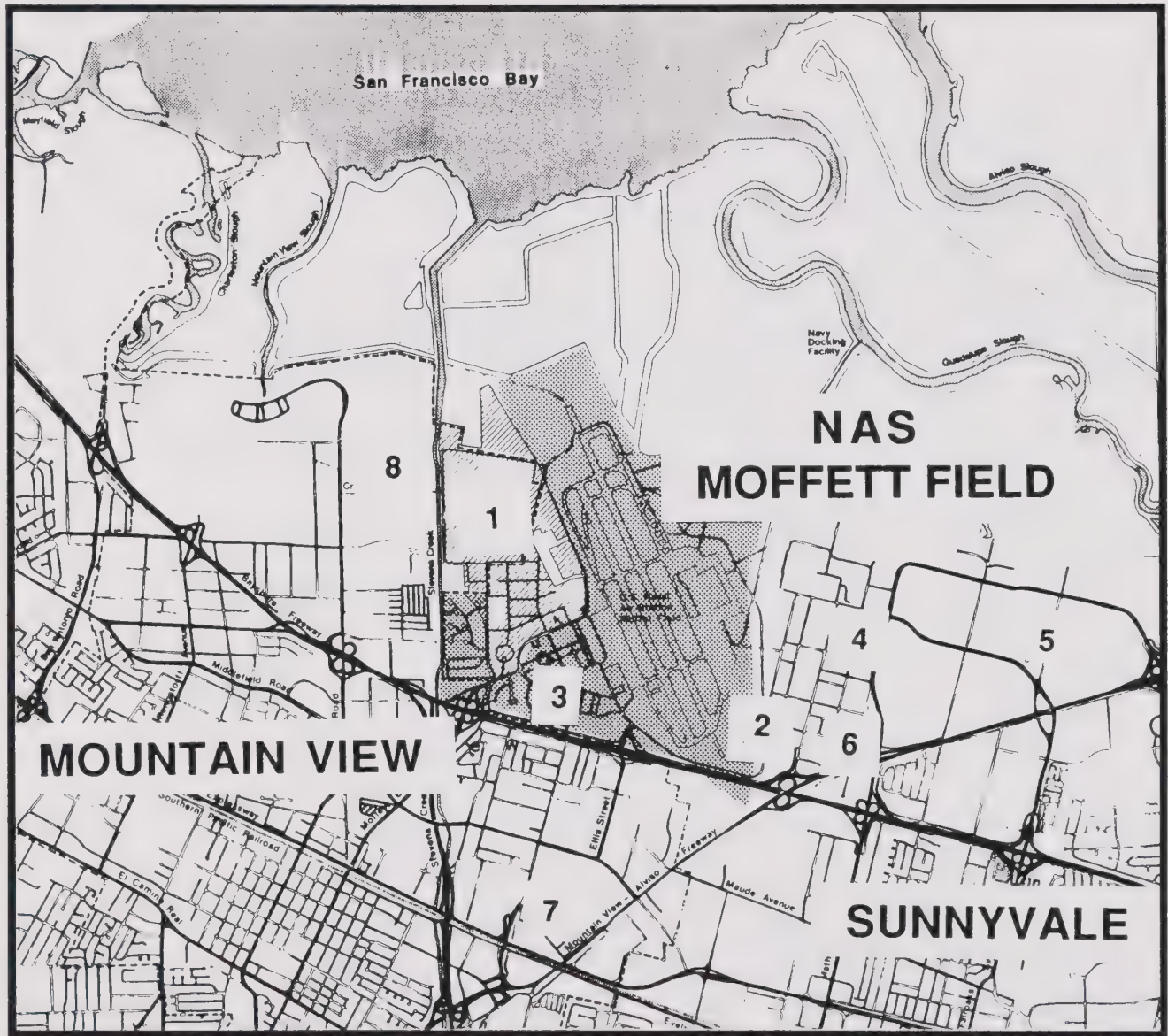
The facilities at NAS Moffett Field / NASA Ames Research Center complex represent a center of gravity that stabilizes and provides strength to the local economy. The activities surrounding and dependent on Moffett airfield are vital components of the economic infrastructure of the Santa Clara Valley. Access to the airfield is integral to the industry research and production capability that was created and preserves the health of the Silicon Valley economy.

NAS Moffett Field is as important to the region as it is critical to each individual participant whose success requires a link to or interaction with research and access to the airfield for secure movement of goods. If these links are jeopardized or broken, individual activity in research, education, and industry's ability to move goods would also be seriously jeopardized, negatively affecting the nation's leadership role in the world's aerospace industry.





# MOFFETT FIELD COMPLEX



- |                                 |                          |
|---------------------------------|--------------------------|
| 1 NASA Ames                     | 5 ESL                    |
| 2 Air National Guard            | 6 Onizuka Air Force Base |
| 3 Naval Air Reserve             | 7 GTE Government Systems |
| 4 Lockheed Missiles & Space Co. | 8 Silicon Graphics       |





# MOFFETT FIELD ECONOMIC IMPACT ESTIMATES

## ENTITIES UTILIZING MOFFETT FIELD

Indicator <sup>1</sup>	Active Duty Navy	NASA Ames Research Center	NASA & DoD Contractors	Other Moffett (Non-Navy)
<b>Employees<sup>2</sup></b>				
Direct	6,200	5,000	34,200	38,000
Indirect	6,000	4,000	33,200	37,000
Total	12,200	9,000	67,400	75,000
<b>Revenue or Budget (\$M)<sup>3</sup></b>				
	250 (est.)	500	6,200	6,800

<sup>1</sup> 1990 estimates.

<sup>2</sup> Direct Navy employees include 4,600 active duty military personnel; Indirect employment multiplier from US Navy Local Economic Report.

<sup>3</sup> This category provides a rough estimate of the purchasing power of the entities and therefore is an indicator of the potential maximum of the economic input.

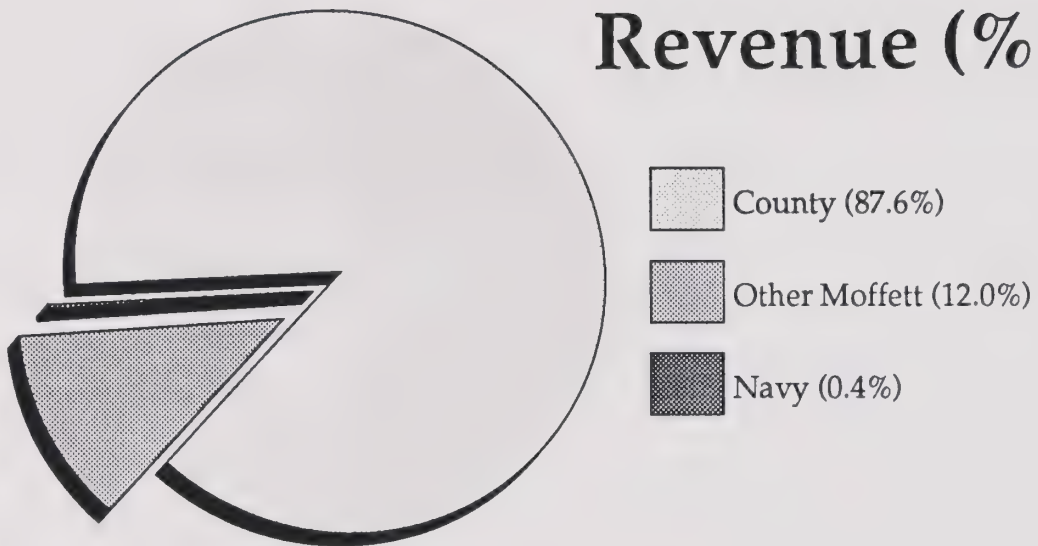
SOURCES: Local Economic Report, Candidate Base Closures/Realignment, San Francisco Bay Area, US Navy, August 1990; NASA; Local Corporations.



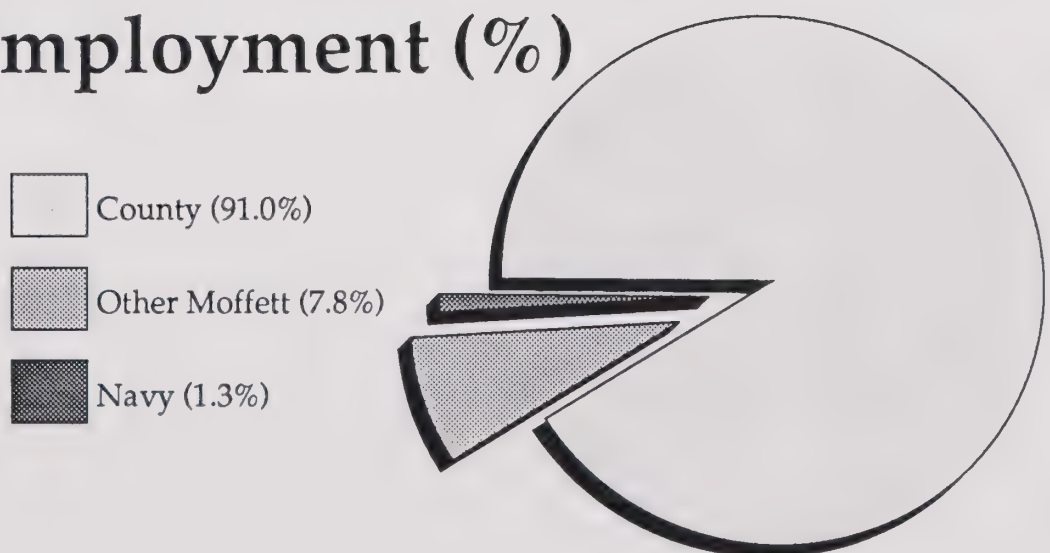


# SANTA CLARA COUNTY

## Revenue (%)



## Employment (%)







# FACT SHEET

■ **Interdependent Facilities.** NAS Moffett Field is not a "stand alone" military base that can be closed without impacting other federal programs and Silicon Valley. The Moffett Field Complex is comprised of Moffett NAS, Naval Air Reserve, California Air National Guard, Army and Air Force support services, NASA Ames Research Center and Silicon Valley high technology and aerospace contractors.

■ **Unique National Assets.** The Moffett Field Complex and nearby high technology and aerospace industries represents a vital and unique national asset. Closure of NAS Moffett Field would send economically harmful reverberations throughout Silicon Valley. It would have a chilling effect on the future of America's research and development and damage our nation's aerospace industry. Roughly 4,500 industries and 75,000 jobs are related to the Moffett Complex. The following are among the largest aerospace and high technology companies dependent upon Moffett Field, which would be directly and/or adversely affected by base closure:

**NASA Ames Research Center**—Silicon Valley's sixth largest high technology employer with 5,000 jobs and an annual budget exceeding \$500 million. NASA's \$3 billion facility includes the world's largest wind tunnel, advanced flight simulators, super computers and aircraft for aeronautical flight research and flying laboratories.

**Lockheed Missiles & Space Company**—LMSC is the largest industrial employer in Northern California with 21,000 employees and an annual payroll of \$1 billion at its Sunnyvale facilities. LMSC facilities include the largest clean room and painting facilities in the western U.S. to accommodate shuttle size hardware. LMSC does business with 2,900 Santa Clara County companies representing a total annual value of \$290 million.

**ESL**—ESL employs 2,000 people at its Sunnyvale facilities and contracts with 2,000 Santa Clara County firms.

**GTE**—GTE Government Systems employs 2,600 people at its Mountain View facility with a payroll of \$90 annually.

■ **EIS Report.** The draft EIS conducted by the Navy as part of the 1990 base closure study indicated an anticipated overall loss of 12,200 jobs, 8,000 fewer households, enrollment decline of 2,300 students, decline in local revenues, and a short term increase in public assistance costs. Not included in the EIS analysis are those activities, indicated above, dependent on NAS Moffett Field.

■ **Relocation Costs.** Relocation of essential Patrol mission squadrons, personnel, training facilities and equipment is estimated between **\$285 to \$450 million**—a cost that would keep Moffett open for at least twelve years at their annual operating budget of \$25 million.

■ **Environmental Clean Up.** To date, the cost of the Moffett Field's environmental clean up study is **\$25 million**. It is estimated that another **\$16-32 million** will be required to complete the study, and \$90 million will be required to clean up the hazardous waste sites over an estimated 15 years. EPA regulations preclude redevelopment of contaminated sites for three years after clean up is completed.





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